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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,143	11/04/2003	Steven W. Holland	GP-303630	4840
<div>7590 02/06/2008 GENERAL MOTORS CORPORATION Legal Staff- Intellectual Property 300 Renaissance Center, Mail Code 482-C23-B21 P. O. Box 300 Detroit, MI 48265-3000</div>			<div>EXAMINER WANG, BEN C</div> <div>ART UNIT 2192</div> <div>PAPER NUMBER</div>	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/701,143

Applicant(s)

HOLLAND, STEVEN W.

Examiner

Ben C. Wang

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 14, 2007 has been entered.

2. Applicant's amendment dated November 14, 2007, responding to the Final Office action mailed May 15, 2007 provided in the rejection of claims 1-21, wherein claims 1-21 are canceled, and claims 22-31 are new.

Claims 22-31 remain pending in the application and which have been fully considered by the examiner.

Claim Rejections – 35 USC § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knight (Pub. No. US 2003/0163587 A1) (hereinafter 'Knight') in view of Funkhouser (Pat. No. US 6,807,469 B2) (hereinafter 'Funkhouser')

4. **As to claim 22 (New)**, Knight discloses a software management system for use in a vehicle, comprising:

- multiple vehicle processors connected to a system bus of the vehicle (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0108]) ; and
- a communications port of the vehicle (e.g., Fig. 2, element 202 – USB Controller, Port 1, Port 2, Port 3);

an interface processor connected to the communications port and the system bus, wherein the interface processor is adapted to, when the portable memory device is connected to the communications port:

- identify software files stored on the portable memory device for each of the multiple vehicle processors, load the identified software files onto the multiple vehicle processors (e.g., [0124] - ... allows the software to be updated via one of the communications ports of adapter ... where CPU would execute an update algorithm to load the software); and

- an external processor having a communications port (e.g., Fig. 1B, element 110 – USB Host; [0117] - ... USB host may be stationary service equipment, such as an engine analyzer).

Further, Knight discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0119]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device) but does not explicitly disclose a portable memory device adapted to store software files and diagnostic information; adapted to receive the diagnostic information from the portable memory device; each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor; to transmit diagnostic information received from the multiple vehicle processors to the portable memory device; to analyze the diagnostic information to determine successful software installation on the vehicle.

However, in an analogous art of *Auto Diagnostic Method and Device*, Funkhouser discloses a portable memory device adapted to store software files and diagnostic information (e.g., Col. 3, Lines 42-49 – a Non Volatile Random Access Memory for storing ... the unprocessed diagnostic data retrieved from the vehicle ...); adapted to receive the diagnostic information from the portable memory device (e.g., Col. 3, Lines 28-38 - ... connectable to a diagnostic port of a vehicle for retrieving diagnostic data from the vehicle); each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor (e.g., Col. 3, Lines 28-38 - ... transferring the unprocessed data to the global computer network communicable device ...); to

transmit diagnostic information received from the multiple vehicle processors to the portable memory device (e.g., Col. 3, Lines 28-38 - ... connectable to a diagnostic port of a vehicle for retrieving diagnostic data from the vehicle); to analyze the diagnostic information to determine successful software installation on the vehicle (e.g., Col. 18, Lines 22-27 - ... software having diagnostic information necessary to identify, from error code in the unprocessed data, source of conditions within the vehicle giving rise to the error codes, and suggested corrections for the conditions so identified).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Funkhouser into the Knight's system to further provide a portable memory device adapted to store software files and diagnostic information; adapted to receive the diagnostic information from the portable memory device; each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor; to transmit diagnostic information received from the multiple vehicle processors to the portable memory device; to analyze the diagnostic information to determine successful software installation on the vehicle in Knight system.

The motivation is that it would further enhance the Knight's system by taking, advancing and/or incorporating Funkhouser's system which offers significant advantages to provide a device that is small enough, and can be manufactured inexpensively enough to allow consumers to retrieve error codes from their vehicle diagnostic system, to therefore be better informed of the malfunctions

visiting their vehicles as once suggested by Funkhouser (e.g., Col. 3, Lines 16-21).

5. **As to claim 23** (New) (incorporating the rejection in claim 22), Knight discloses the system wherein the communications ports of the vehicle and the external processor comprise open architecture communication ports (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; [0116] - USB adapter ... acts as a network bridge between vehicle communication network and USB host and USB devices(s)).

6. **As to claim 24** (New) (incorporating the rejection in claim 23), Knight discloses the system wherein the communications ports of the vehicle and the external processor comprise universal serial bus ports (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; [0116] - USB adapter ... acts as a network bridge between vehicle communication network and USB host and USB devices(s)), and Funkhouser discloses the portable memory device comprises a universal serial bus drive (e.g., Abstract, Lines 1-5 - ... a hand holdable, data acquisition and transfer device).

7. **As to claim 25** (New) (incorporating the rejection in claim 22), Knight discloses the system wherein the portable memory device stores software files for multiple vehicle types, and the interface processor identifies the software files

based at least in part on vehicle type (e.g., [0124] - ... allows the software to be updated via one of the communications ports of adapter ... where CPU would execute an update algorithm to load the software).

8. **As to claim 26** (New) (incorporating the rejection in claim 22), Funkhouser discloses the system wherein the multiple vehicle processors generate the diagnostic information by automatically performing self-tests on the installed software (e.g., Col. 18, Lines 22-27 - ... software having diagnostic information necessary to identify, from error code in the unprocessed data, source of conditions within the vehicle giving rise to the error codes, and suggested corrections for the conditions so identified).

9. **As to claim 27** (New), Knight discloses a vehicle comprising:

- a communications port (e.g., Fig. 2, element 202 – USB Controller, Port 1, Port 2, Port 3);
- multiple vehicle processors connected to a system bus of the vehicle (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0108]); and an interface processor connected to the communications port and the system bus, wherein the interface processor is adapted to, when a portable memory device is connected to the communications port:

- identify software files stored on the portable memory device for each of the multiple vehicle processors, load the identified software files onto the multiple vehicle processors (e.g., [0124] - ... allows the software to be updated via one of the communications ports of adapter ... where CPU would execute an update algorithm to load the software).

Further, Knight discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0119]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device) but does not explicitly disclose adapted to generate diagnostic information indicating success of software installation on the multiple vehicle processors; to transmit diagnostic information received from the multiple vehicle processors to the portable memory device.

However, in an analogous art of *Auto Diagnostic Method and Device*, Funkhouser discloses adapted to generate diagnostic information indicating success of software installation on the multiple vehicle processors (e.g., Col. 18, Lines 22-27 - ... software having diagnostic information necessary to identify, from error code in the unprocessed data, source of conditions within the vehicle giving rise to the error codes, and suggested corrections for the conditions so identified); to transmit diagnostic information received from the multiple vehicle processors to the portable memory device (e.g., Col. 3, Lines 28-38 - ... connectable to a diagnostic port of a vehicle for retrieving diagnostic data from the vehicle).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Funkhouser into the

Knight's system to further provide adapted to generate diagnostic information indicating success of software installation on the multiple vehicle processors; to transmit diagnostic information received from the multiple vehicle processors to the portable memory device in Knight system.

The motivation is that it would further enhance the Knight's system by taking, advancing and/or incorporating Funkhouser's system which offers significant advantages to provide a device that is small enough, and can be manufactured inexpensively enough to allow consumers to retrieve error codes from their vehicle diagnostic system, to therefore be better informed of the malfunctions visiting their vehicles as once suggested by Funkhouser (e.g., Col. 3, Lines 16-21).

10. **As to claim 28** (New) (incorporating the rejection in claim 27), please refer to claim **23** as set forth accordingly.

11. **As to claim 29** (New) (incorporating the rejection in claim 28), Knight discloses the vehicle wherein the communications port comprises a universal serial bus port (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 - vehicle communications network; [0116] - USB adapter ... acts as a network bridge between vehicle communication network and USB host and USB devices(s)).

12. **As to claim 30** (New) (incorporating the rejection in claim 27), please refer to claim **25** as set forth accordingly.

13. **As to claim 31** (New) (incorporating the rejection in claim 27), please refer to claim **26** as set forth accordingly.

14. **As to claim 32** (New), Knight discloses a vehicle software installation method for use in vehicle assembly, comprising:

- an interface processor of a vehicle via a communications port of the vehicle (e.g., Fig. 2, elements 204 – CPU, 202 – USB Controller, Port 1, Port 2, Port 3; [0119] - ... central processing unit (CPU) ...), wherein the interface processor is connected to multiple vehicle processors of the vehicle via a system bus of the vehicle;
- employing the interface processor to identify, for each of the multiple vehicle processors e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0108]), software files on the portable memory device, and to load the software files received over the communications port onto the multiple vehicle processors (e.g., [0124] - ... allows the software to be updated via one of the communications ports of adapter ... where CPU would execute an update algorithm to load the software);

- installing the software files on the multiple vehicle processors (e.g., [0124]
- ... allows the software to be updated via one of the communications ports
of adapter ... where CPU would execute an update algorithm to load the
software);

Further, Knight discloses establishing communication between a portable memory device; an USB adapter and associated communication ports (e.g., Fig. 2; [0119]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110-USB Host, 112 – USB Device) but does not explicitly disclose a portable memory device adapted to store software files and diagnostic information; transferring diagnostic information indicating success of software installation from the multiple vehicle processors to the portable memory device via the interface processor; establishing communication between the portable memory device and an external processor via a communications port of the external processor; and analyzing the diagnostic information via the external processor to determine success of software installation in the vehicle.

However, in an analogous art of *Auto Diagnostic Method and Device*, Funkhouser discloses a portable memory device adapted to store software files and diagnostic information (e.g., Abstract, Lines 1-5 - ... a hand holdable, data acquisition and transfer device); transferring diagnostic information indicating success of software installation from the multiple vehicle processors to the portable memory device via the interface processor (e.g., Col. 18, Lines 22-27 - ... software having diagnostic information necessary to identify, from error code in the unprocessed data, source of conditions within the vehicle giving rise to the

error codes, and suggested corrections for the conditions so identified); establishing communication between the portable memory device and an external processor via a communications port of the external processor (e.g., Col. 3, Lines 28-38 - ... a second data link connectable to a global computer network communicable device); and analyzing the diagnostic information via the external processor (e.g., Fig. 1, element 10) to determine success of software installation in the vehicle (e.g., Col. 18, Lines 22-27 - ... software having diagnostic information necessary to identify, from error code in the unprocessed data, source of conditions within the vehicle giving rise to the error codes, and suggested corrections for the conditions so identified).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Funkhouser into the Knight's system to further provide a portable memory device adapted to store software files and diagnostic information; adapted to receive the diagnostic information from the portable memory device; each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor; transmit diagnostic information received from the multiple vehicle processors to the portable memory device; to analyze the diagnostic information to determine successful software installation on the vehicle in Knight system.

The motivation is that it would further enhance the Knight's system by taking, advancing and/or incorporating Funkhouser's system which offers significant advantages to provide a device that is small enough, and can be manufactured

inexpensively enough to allow consumers to retrieve error codes from their vehicle diagnostic system, to therefore be better informed of the malfunctions visiting their vehicles as once suggested by Funkhouser (e.g., Col. 3, Lines 16-21).

15. **As to claim 33** (New) (incorporating the rejection in claim 32), please refer to claim **23** as set forth accordingly.

16. **As to claim 34** (New) (incorporating the rejection in claim 33), please refer to claim **29** as set forth accordingly.

17. **As to claim 35** (New) (incorporating the rejection in claim 32), Knight discloses the method further comprising employing a universal serial bus drive as the portable memory device (e.g., Fig. 1B, element 112 – USB Device).

18. **As to claim 36** (New) (incorporating the rejection in claim 32), please refer to claim **25** as set forth accordingly.

19. **As to claim 37** (New) (incorporating the rejection in claim 32), please refer to claim **26** as set forth accordingly.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BCW *BW*


TUAN DAM
SUPERVISORY PATENT EXAMINER

January 28, 2008